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WRIGHT STATE UNIVERSITY SCHOOL OF MEDICINE

Vitalsigns

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Across the horizon:

An educational initiative comes of age

The responsible use of animals in research

by Mark Willis

Editor's Note: *On January 31, the Greene County Board of Commissioners was asked to reverse its policy of releasing unclaimed pound dogs from the county animal control unit to Wright State University for use in biomedical education and research. Representatives of WSU presented public testimony to the commissioners on February 12 to explain the humane and responsible use of animals in medical research. The following testimony was presented by Mark Willis, School of Medicine communications manager.*

On March 12, following two unscheduled inspections of WSU's Laboratory Animal Resources facilities, the commissioners voted unanimously to resume the county's policy of releasing unclaimed animals to WSU. Their decision was challenged in court, where Judge Roger Wilson ruled that according to Ohio law the county dog warden has the discretion to decide the final disposition of unclaimed animals. Greene County Animal Control Officer Art Evans concluded ten weeks of public debate on the issue by announcing that he would resume the county's release policy, which he said was "humane and legal."

Finding a parking space last summer didn't worry this killdeer, which laid four eggs in the gravel parking lot at WSU's Frederick A. White Health Center. The staff there asked Dr. Robert Stuhlman, director of WSU's Laboratory Animal Resources program, to block off the nest and six adjacent parking spaces for protection. Three eggs hatched.

I must thank the citizens who made hostile statements to me after the January 31 meeting. They did this, not because they know me, not because they had heard my opinions—only because I stood up as a representative of Wright State University and requested time on your agenda. They convinced me that I had to make a personal statement about this. What I remember most from the January 31 meeting is anger. That's certainly what made it on the TV sound bites. I really think there is too much anger in the world today. I want to counter it with conviction. I did not come to my present job by coincidence, and my convictions are not part of the job description. Let me explain.

I've spent most of my life in Greene County. I was educated here. I think it's a good place to raise a family. Twenty years ago when I was a student at Beavercreek High School, I wanted to be an ecologist. Somewhere along the way I became a writer instead, but I never lost my love for wild animals, my fascination with the life process itself, or my commitment to saving what is left of the natural world.

Somewhere else along the way, I learned that I have a degenerative eye disease. It's genetic; my sister Diana has the same condition. I am now partially blind. I'm speaking to you from my heart because I cannot read words that I've written on paper. I shifted my career in the direction of medical and science writing, and I took my job at Wright State School of Medicine so I could deepen my ability to understand and explain this disease. I have learned to live with an uncertain future. I'm not holding my breath, waiting for a cure for me. But I think my son Brendan, and the children he may have, and their children, should know everything they can about a disease they could inherit from me.

Research at Wright State University, animal research that someone on January 31 unfairly suggested was an attempt at dishonesty and cover-up, might someday provide answers about the biochemistry of this kind of blindness. When that happens, my family will owe a great debt to the laboratory rats, and to all the cats and the dogs and the monkeys that have gone into the research, too. I don't want to face my grandchildren in the year 2020 and say, "Well, in the old days we did research to find a cure, but some misguided animal lovers shut it down!"

My disease is rare; my experience may never touch your lives. But let me share something else that could. In 1986, my father Bob suffered a heart attack during the Sunday service at the Winter Street Methodist Church in Yellow Springs. He experienced serious complications, and he lived the last year of his life in a coma at the Friends Care Center. It's a sad fact today that we know how to resuscitate the heart—many of us in this room know CPR techniques—but we do not know yet how to resuscitate the brain.

I know what it's like to spend 48 sleepless hours in the cardiac intensive care unit at Miami Valley Hospital. The only solace I found in that time was the fact that my father's physicians were residents and faculty at Wright State School of Medicine. I knew them, and they knew what they were doing.

As I cared for my comatose father in the year that followed, talking to him and telling him stories, moving his limbs and massaging his muscles, I thought a lot about what it all means. What we call life. And sometimes I remembered that medical research at Wright State University, research using dogs that no one else wanted, might someday find a way to prevent the kind of massive brain damage that ended Bob Willis's conscious life. If that ever happens, we will all owe a debt to those dogs.

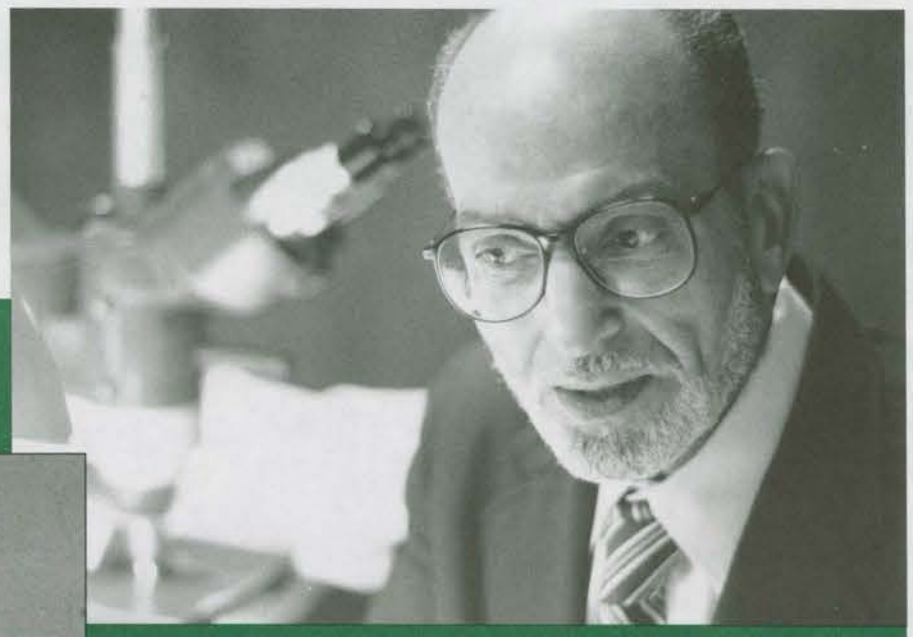
I ask each of you—Ms. Hagler, Mr. Madden, Mr. Bone—if you had a heart attack tonight, would you tell the paramedics, "Don't take me to a hospital! What they could do to save my life was tested using dogs, and I think that's wrong!" Would you say that? How many people in Greene County would say that?

The Greene County Health Commissioner now has the results of a two-year epidemiological study of the county's health risks and needs. It was conducted by Dr. Satya Sangal from Wright State's Department of Community Health. Dr. Sangal told me that the health commissioner is not ready to release the results of that study to the public, so I don't know what the numbers say. But I ask you, as you make your decision about unclaimed pound dogs, please look at that study. How many people in Greene County had heart attacks? What is the incidence of heart disease? Hypertension? Diabetes? Kidney disease, or cancer? If medicine can offer those people anything that can improve the quality of their lives or their chances of survival, they will owe a great debt to unwanted pound dogs, including those that come from the Greene County Animal Shelter.

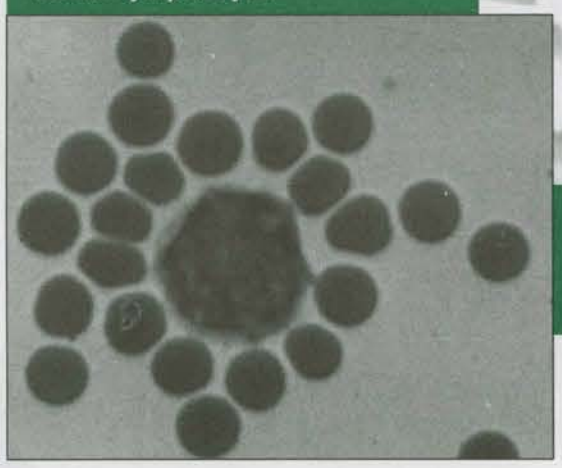
Last year, 1,638 unclaimed dogs that no one in Greene County wanted were put to death at the animal shelter. They've slipped out of sight in this controversy. Their lives were completely wasted. We owe them nothing. Two hundred and twelve dogs were released for medical education and research. Some value was found in their lives. At Wright State University, we know that we owe those dogs a lot.

Simple leukemia test ensures 100% diagnosis

by Cheryl Scott



Dr. Al Batata proved that the mouse-rosette test ensures diagnosis of chronic lymphocytic leukemia in all cases.



Viewed through a microscope, mouse red-blood cells attach in a rosette pattern to a leukemic human lymphocyte.

Today's doctors can turn to a sophisticated array of medical technologies, from computers to designer genes, to diagnose elusive diseases. In certain cases of leukemia, however, an effective diagnostic technique can be as simple as a microscope, mouse blood, and a trained eye.

The technique, known as the mouse-rosette test, was once the only way to diagnose chronic lymphocytic leukemia, a cancer of white blood cells that can be difficult to diagnose in its early stages. In the early 1980s, the mouse-rosette test was dropped by most pathology laboratories in favor of newer techniques using a computer-driven cell counter called a flow cytometer.

Dr. Al Batata, professor and chair of pathology at Wright State University School of Medicine, acquired the first flow cytometer in Ohio in 1983. But he continued to use the mouse-rosette test because he suspected it detected leukemia cases that the machine missed.

To test his theory, Batata collected data for ten years comparing different diagnostic techniques in 167 leukemia cases. In a study published in the journal *Cancer*, he reported that the mouse-rosette test diagnosed 145, or 87 percent, of the cases. Using the mouse-rosette test along with two newer methods achieved 100 percent accuracy in detecting the leukemia.

"I still rely a lot on my eyes," Batata says. "If I see something which doesn't follow the flow cytometer results, I believe my eyes more than the machine."

The mouse-rosette test diagnoses leukemia by combining red blood cells from laboratory mice and white blood cells, or lymphocytes, from human patients. When observed through a microscope, three or more mouse cells attach to a leukemic lymphocyte in a rosette pattern (like the petals of a rose). When 30 to 80 percent of the lymphocytes in a sample form rosettes, chronic lymphocytic leukemia is indicated.

Why does the mouse-rosette test work? It is thought that during the leukemic transformation of human lymphocytes, the cells develop surface receptors that bind with mouse red-blood cells.

Using the test to supplement two newer diagnostic methods can ensure that all leukemia cases are detected, according to Batata. "It's a simple test, but it can pick up the false negative results of the other tests," he says. "The drawback is that it is time consuming and requires a lot of experience by laboratory technicians."

Most pathologists today use the monoclonal antibody CD5 to diagnose chronic lymphocytic leukemia. Produced by genetic engineering techniques, the monoclonal antibody is a product of a cell coded to produce an antibody that binds only with a specific receptor molecule on the surface of malignant leukemia cells. If CD5 attaches to 30 percent or more of the lymphocytes in a blood sample, the diagnosis is positive for leukemia.

The other widely used diagnostic test detects the presence of a class of receptor molecules by using antibodies to surface immunoglobulins (SIg). Lymphocytes from normal individuals carry seven kinds of surface immunoglobulins. If the lymphocytes in a blood sample bind to only one kind of SIg antibodies, leukemia is indicated.

Both CD5 and SIg tests use antibodies tagged with a fluorescent dye. When the antibodies bind with a malignant lymphocyte, it is tagged with the dye, too. A flow cytometer can detect and count thousands of fluorescent cells in a matter of seconds.

The mouse-rosette test is slow and low-tech compared to the newer methods. But according to Batata, it is equally reliable. By using all three tests, he says, "there will be no chance of a patient slipping through the cracks, coming back repeatedly without a diagnosis."

Chronic lymphocytic leukemia occurs mainly in older patients, and its symptoms can take years to develop. It is incurable, but earlier diagnosis can affect the treatment and give patients much-needed time to adjust to the disease. "We have an obligation to tell patients when we can," Batata says, "so they can make informed decisions about their lives."

Researchers study blindness caused by airborne fungus

by Cheryl Scott

It's in the air around us. It's in old cattle feed stored in barns, it grows on moldy bread forgotten in the kitchen, and it can cause blindness and eye loss.

It is a fungus, *Aspergillus*, which only causes allergies in most cases. But in people with weak immune systems, it can lead to a rare disease resulting in blindness. Only about 100 cases of the disease have been reported, according to Dr. John D. Bullock, professor and chair of ophthalmology at Wright State University School of Medicine.

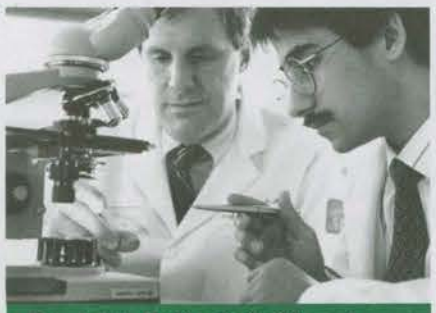
Assisted by Wright State medical student Andy Aziz, Bullock recently developed the first experimental model to induce the disease by injecting the fungus into the bloodstream of laboratory animals.

Most people don't contract the disease because they have healthy immune systems, Bullock explains. When they breathe the airborne fungus into their lungs, it enters the bloodstream and immune cells kill it. If the immune system fails to stop the fungus, however, it can travel throughout the bloodstream, damaging any organ and eventually reaching the eyes.

The disease is hard to detect once it's in the eye, Bullock says. Initially, people complain of redness and irritation of the eye and a decrease in vision.

The disease can spread to both eyes, causing blindness in as little as a week. It can damage the eye so much that it has to be removed.

"It makes you thankful for having a strong immune system," Bullock says.



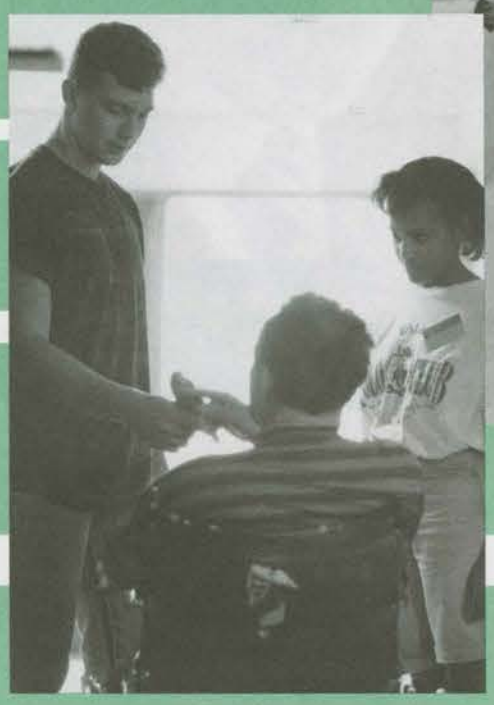
Dr. John Bullock (left) and Andy Aziz

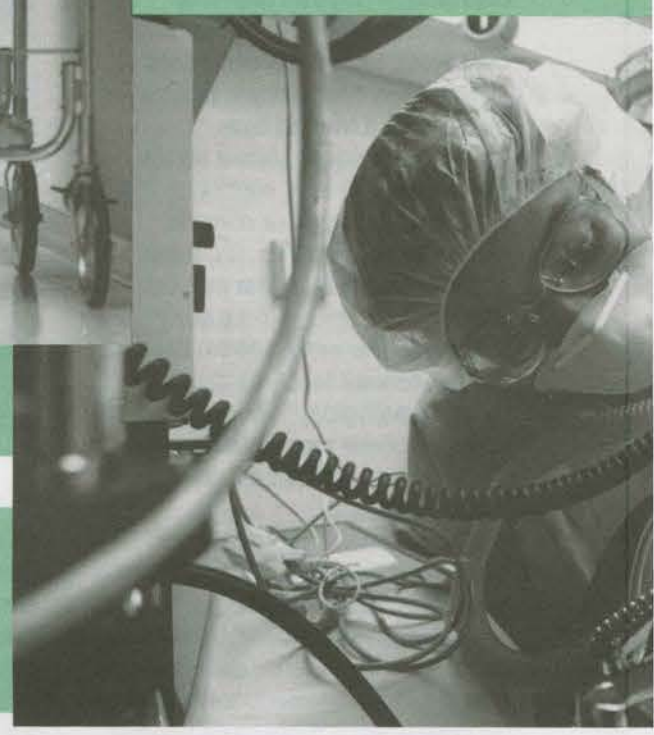
The risk of contracting the disease, he explains, is increased among people who have AIDS, which attacks the immune system, and cancer, or among other patients treated with immune-suppressing drugs. He hopes the research will lead to early detection of the disease, which would allow it to be treated successfully with existing medications.

Bullock likes to involve medical students in various stages of his research. "It reinforces what they learn in lecture at a practical level," he says. "It's good to get students interested in research early so they will consider it in their careers."

Bullock began the research several years ago with Tom McGuire, who graduated last year from Wright State School of Medicine. Their work focused on the importance of determining the specific fungus causing the disease. Aziz helped to develop the experimental model by using a fungus strain recovered from a patient who had the disease, instead of a laboratory strain.

"This model is a good stepping stone," Aziz says, "because we can figure out how the fungus affects the eye and possibly find ways of preventing the disease."





Across the hori

Educational initiatives come and go. Few survive the test of time, and fewer still make a dent in the pervasive problems they were meant to solve. The Horizons in Medicine program at Wright State University School of Medicine is one of the few, and it has the hard numbers and success stories to prove it.

Horizons was launched more than a dozen years ago to tackle one of American medicine's great inequities—the disproportionately low number of African-Americans and other minorities practicing the profession. A visionary group of educators and community leaders recognized that changing the demographics required intervention early in the educational system, to give minority students a sense of the career possibilities in medicine and other health professions, and to show them the serious preparation needed to fulfill their dreams.

Horizons is a six-week summer program for minority or socially disadvantaged high school students from the Miami Valley area. They spend mornings in classrooms and laboratories at Wright State, where they are introduced to subjects such as biochemistry and anatomy which are essential to medical education. They spend afternoons working in community health care centers affiliated with Wright State. The work assignment is a first job for many of the students, an opportunity to begin to build the interpersonal skills needed in health care professions.

Since 1979, 235 high school students have completed Horizons; 97 percent have entered college, and 92 percent of them have graduated from college. Twenty-seven Horizons alumni have entered medical school, and 12 of them have earned M.D. degrees. With the graduation of three Horizons physicians this year at Wright State (see story on page 5), the educational initiative clearly has come of age.

The commitment of the Horizons community advisory committee, which selects students from an increasingly competitive applicant pool, has been essential to the initiative's achievements. "I think the key to this program's success is that the original committee is still in place. We've stayed the course and seen it through," says Allen Pope, director of the Horizons program and of minority affairs and financial aid at the School of Medicine.

Six of its seven members—Pope, Dr. Gideon Adegbile, Dr. Robert Davis, Edythe Lewis, Lawrence Nelson, and Ruth Richardson—have worked on the committee from the beginning. George Findley replaced the late Clarence Bowman, former president of the Dayton chapter of the NAACP, in 1982. Their voluntary efforts were recognized in June when the medical school's graduating class presented its Appreciation Award to the committee.

Another key to success, according to Gideon Adegbile, has been steadfast support from the medical school's administration and faculty as well as the Gem City Medical, Dental and Pharmaceutical Society, an influential organization of African-American health care professionals in the Dayton area. The idea of Horizons grew out of a brainstorming session early in the school's development, Adegbile recalls, when educators and Gem City representatives sought ways to involve the community in the school's mission.

Adegbile has a private family practice in Dayton and is a clinical professor of family practice at Wright State. He is the Horizons committee co-chair, together with Robert Davis, a Dayton dentist and associate clinical professor of community health. As leaders in the Gem City group and professional role models in the community, they recognize Horizons as a long-term investment in young people with potential.

Wright State University added to the investment in 1987 when it established scholarships for Horizons students, according to George Catterlin, who works as the program's assistant director because "it is so socially valuable." Wright State awards a one-year, full-tuition scholarship to everyone who completes the program, and the top student receives a four-year scholarship.

Horizons committee members agree that they have learned to disagree in their deliberations. "We struggle, ardently struggle, to make the selections," says George Findley, a retired principal and administrator of the Dayton public school system. "But over the years, we have bonded together."

"Almost all of the applicants qualify. It's tough to make clear-cut choices," Adegbile explains. He looks for students who show effort and aspiration to grow. Findley looks for those with the strong desire "to stick it out" through a professional education. He adds, "The sincere ones stand out." Edythe Lewis looks for students

On the cover: *Medical student Lisa Crawford (center), a Horizons program assistant, explains an anatomical feature to Horizons students Henrietta Peters, Natasha Island, Tanek Lemon, and Denita Brown.*

Above: *Clinical assignments as nursing home aides take Michael Page and Yolanda Luc (Center) Katina Locust transports a patient at Kettering Medical Center. (Right) Denita Br surgery aide at the USAF Medical Center, Wright-Patterson Air Force Base.*

izon

with "people" potential.

"I look for young people who have given of themselves, who have shown love for other people, who have done something in the community," explains Lewis, a retired R.N. and nurse-educator. "I want to know first how these young people will relate to other people. Their grades will follow.

"We have selected young people from very disadvantaged backgrounds who may never have this kind of opportunity again," she continues. "Some are nervous and hesitant when they begin the program, and in six weeks they grow so much, their self-confidence blossoms."

"It's worth all our work to give someone a chance," Adegbile says. "Horizons has been instrumental in helping students clarify their goals. It also gives them a sense of healthy competition for the next step in their education."

Edythe Lewis says of her colleagues, as they look to future Horizons, "We are committed. There's a lot of validity to what Horizons in Medicine has to offer."

And what it offers, George Findley expresses in one word. "Affirmation."

la Lucas (left) to the Friends Care Center. ita Brown examines the sterile field as a

Horizons set on medicine

Class of '91 graduates Angela Long-Prentice, Patricia Fine Rosenstein, and Joi Findley

by Mickey Davis

Angela Long-Prentice is one step closer to her goal—a doctor's office in the same location where her father, Dr. Henry Long, Jr., once had his family practice.

"Right near the corner of Germantown Street and McArthur Avenue," she says. "Maybe someday I can name a medical center there after my father (who died in 1972), but right now I have a three-year residency ahead of me."

Long-Prentice, Patricia Fine Rosenstein, and Joi Findley graduated with 83 others Saturday from Wright State University's School of Medicine.

"It takes a lot of hard work to reach this point but I've never been happier in my life," Long-Prentice says.

As high school juniors, the three women were introduced to the medical field through WSU's Horizons in Medicine program.

Launched in 1979, Horizons gives minority and disadvantaged high school students an opportunity to explore careers in medicine and other health professions.

Twenty high school juniors (participated) in the June 24–August 2 program that includes classroom and laboratory work at WSU in the mornings and work at health care facilities in the afternoons.

Findley took part in the first six-week Horizons study program in 1979; Long-Prentice in 1980; and Fine Rosenstein in 1981.

Since 1979, 235 have completed Horizons programs, with 97 percent entering college and 92 percent graduating.

Twenty-two Horizons alumni have entered medical school, with five attaining medical degrees.

"That summer of '80 was the first time I had ever worked in a hospital," recalls Long-Prentice, who was then an Alter High School student. "My job was working in the cafeteria at St. Elizabeth Hospital and I almost quit. I remember telling my mother, 'What does picking up trays for the patients have to do with medicine?'

"Then I realized that every time you walk into a room you could make a patient smile. I started building patient relationship skills that summer and I bring those same skills to patients today.

"You have to build a trust with your patients. Someone once said, 'Sometimes the patients don't care what the doctor knows, but they want to know that the doctor cares.' How true that is."

Long-Prentice, 27, a 1984 University of Dayton graduate, (began) a three-year residency July 1 in Good Samaritan Hospital's family practice program.

Her grandfather, Henry Long, Sr., was a doctor. He had two sons, Henry and Walter, who also became doctors.

"Both my father and my uncle had sons who were supposed to go into medicine," Long-Prentice says. "Neither my father's nor my uncle's sons did, but both their daughters did."

She's married to accountant Joel Prentice; they have two children—Joshua, 2, and Ariel, 1.

Fine Rosenstein, 26, graduated from Yellow Springs High School in 1983. With Horizons, she was assigned to Kettering Medical Center.

"I started baby-sitting at 9, and I've always been able to relate to children," she says, "but the Horizons program opened doors for me to see what it's like to work in a hospital and confirmed for me my desire to become a doctor.

"I can remember caring for several kids who were there for extended stays. One, a little girl, 11, was anorexic. I'd walk around and around the halls with her and I remember someone saying to her, 'You're keeping her very busy.' And this little girl said, 'She's the only one who understands me.' I was 18 at the time and her words made quite an impact with me."

After graduating from Ohio University in 1986 with a major in cytology and a minor in Southeast Asian studies, Fine Rosenstein studied for six months at the National University of Malaysia. She entered WSU's medical school in September 1987.

Fine Rosenstein, who married NCR accountant Andrew Rosenstein May 26, will serve a residency in pediatrics at Children's Medical Center.

Eventually she wants to set up a general practice and focus on adolescent substance abuse.

For her Horizons job experience, Findley, 28, who graduated from Alter High School in 1980, worked in the emergency room and outpatient surgery at Good Samaritan Hospital.

"I basically ran errands," she recalls, "but I did get the chance to observe a lot of hospital procedures and to talk to patients. I've wanted to be a doctor since I was 5, and even though everyone said I should look into other things, Horizons gave me the experience to work in a hospital and solidified my decision to go into medicine."

Findley graduated with a biology degree from Xavier University of Louisiana in 1984. She earned a master's degree in nutrition at Ohio State University in 1986, and taught biology and general science for a year at Colonel White High School.

She entered WSU's medical school in September 1987. Now she'll serve a one-year internship at Aultman Hospital in Canton.

She plans to concentrate on obstetrics and gynecology.

"This is something I just always wanted to do," she says. "I also want to come back to Dayton after I finish my residency to set up a private practice or be part of a group practice.

"A lot of good things have happened for me in Dayton. It's a community where I grew up and a community where I've always had a lot of support."

Editor's Note: *Mickey Davis is features editor of the* Dayton Daily News. *Photo by Ty Greenleas. Reprinted with permission.*

Untying the elderly

Left: A resident at the Friends Care Center enjoys his exercise class. Exercise and a variety of daily activities are keys to success in restraint-free nursing homes.

What's good medicine is also good law

When Congress passed the 1987 Omnibus Budget Reconciliation Act, or OBRA, it did more than tie down some loose ends in a sprawling federal budget. Tucked into OBRA was the Nursing Home Reform Act, which, among other things, guaranteed the right of nursing home residents to be untied from needless restraints.

Two years later, at a Capitol Hill symposium sponsored by the Senate Special Committee on Aging, a nursing home risk manager suggested that the restraint-free movement's rallying cry really should be "Untie the Elderly: Tie Up Their Attorneys." His quip revealed the principal reason why half a million elderly people were physically or chemically restrained every day in American nursing homes. Physicians and nursing home administrators thought restraints were good defensive medicine, a safeguard against potential litigation.

Marshall Kapp, who also spoke at the Senate symposium, disagrees with that notion. Professor of community health and director of Wright State's Office of Geriatric Medicine and Gerontology, Kapp recently completed a study for the Commonwealth Fund that surveyed legislation and case law surrounding the use of restraints. His research concluded that fear of litigation for not using restraints is unwarranted. In fact, lawsuits are much more likely to result from unnecessary or negligent restraint use. "What is good medicine," attorney Kapp says, "is also good law."

In 1989, federal surveys estimated that 41 percent of the nation's nursing home residents were put into restraints. According to Kapp, any device that impedes an individual's freedom of movement, or is perceived to do so, is a restraint. Geriatric (geri) chairs, vests, belts, wrist straps, sedatives, and hypnotic drugs are often used.

Preventing elderly residents from falling down, wandering off, or acting out are the common reasons for ordering restraints. As Kapp explains, however, restraints were not always justified clinically. "Some residents were kept in restraints for years and no one knew why. Nursing homes got into the routine of using restraints as a substitute for individualized resident care. The restraints were used to address behavior problems without looking into the cause of the problem."

Kapp's legal research refutes the misconception that restraints reduce a nursing home's liability in lawsuits resulting from injury to residents in falls or other mishaps. No lawsuit in the U.S. has succeeded solely because a nursing home failed to restrain a resident. Most civil suits involving injury of nonrestrained residents have been successfully defended, and courts have consistently recognized that there are strategies other than restraints for meeting the challenge of resident safety.

More significantly, Kapp found, restraints *increase* legal liability because they present substantial clinical risks to residents. Cases where nursing homes are held liable for the using restraints improperly—for example, when a resident strangled to death in a vest that was tied on backwards—"far eclipse" those involving nonuse of restraints. Such cases have been filed on grounds of negligence and battery, and there is at least one criminal prosecution resulting from restraint use. The legal judgments and settlements sometimes have reached into the millions of dollars.

In October 1990, when OBRA's administrative regulations took effect, the nursing home's legal risks for indiscriminate restraint use increased even more. No nursing home resident may be restrained "for discipline or convenience," according to the regulations. The medical reasons for restraining a resident must be documented in an individual care plan that considers the overall effects of restraints on the resident's well-being. In each case, nursing homes are required to use the least restrictive alternative. Nursing homes that fail to comply with OBRA risk losing Medicaid and Medicare certification.

"Realistically, that is of much graver concern for nursing homes than is possible tort liability," Kapp says.

With the implementation of OBRA, he explains, "everybody has to change their way of thinking. That includes doctors, nurses, and nursing home administrators as well as the residents and their families. The process will take time. You can't take people who have been restrained for years and say go—you're free. It's important for nursing homes to do this gradually, on an individual basis.

"The reaction of the nursing home industry," he continues, "has not been to argue with OBRA, but to say, okay, teach us how to do it."

Alternatives to restraints can be as simple as increasing the variety of daily activities for nursing home residents, Kapp explains, because many tend to act out from boredom. Residents at risk of falling down can strengthen frail limbs through walking and exercise programs. Modified chairs, such as tilting recliners, may be the solution for residents who cannot walk. And for those at risk of wandering off, alarms on doors and safe wandering zones are restraint-free alternatives.

The fundamental step in finding alternatives to restraints, Kapp explains, is developing an individual care plan for each nursing home resident. The care plan sets up a routine for the resident that suits individual capabilities and needs. It incorporates the expertise of the health care team—physicians, nurses, and therapists—and also involves the resident and his or her family. Then it is reevaluated continuously to meet changing needs.

The Friends Care Center in Yellow Springs, an important educational site for Wright State medical students on family practice and geriatric medicine rotations, has been restraint free since the beginning of the year. According to Chris Brookshire, the center's director of social services, there has been a dramatic drop since then in the number of incident reports documenting falls by residents. Only one fall this year resulted in an injury.

"We are diligent about walking with residents so they won't try to stand up unassisted. We try to provide enough activities to keep them involved," Brookshire says. The center also has a self-contained Alzheimer's unit, with an outdoor patio, which is safe for residents who wander.

"People are going to fall down, whether they're restrained or not," he explains. "We try to keep them active enough to maintain muscle tone and bone integrity, so that when they do fall, they're less likely to be hurt.

"Because of the success we've seen here," Brookshire concludes, "we have no intention of going back to restraints."

Medical illustrator donates work to Wright State's Fordham Library

by Heather Darrow

What's the difference between the work of a medical illustrator and that of other visual artists? "You're not a portrait painter who interprets what you think you see," explains Dorothy Brower. "You've got to *know* the meaning behind what you illustrate."

Dorothy Brower should know. Her career as a medical illustrator began more than 60 years ago at The Johns Hopkins University, where she studied with the teacher regarded as the "father of modern medical illustration." It concluded at Wright-Patterson Air Force Base, where she worked in a top secret environment with America's first astronauts as they prepared for manned space flight.

Brower recently donated much of her life's artwork to the historical archives of the Fordham Health Sciences Library at Wright State. The donation includes boxes of sketches and detailed drawings, photographs, and three-dimensional wax sculptures of anatomical features.

Now age 90 and a resident of Heartland of Beavercreek Nursing Center, Brower is fond of recounting stories from her eventful life. As a child, her summer playmates included the children of President Grover Cleveland. She met pilot Wiley Post, the first man to fly solo around the world, through his friendship with her uncle, Charles Brower.

Brower's uncle, an Alaska pioneer, was known as the "King of the Arctic." It was he whom Post and humorist Will Rogers flew off to visit before their fateful airplane crash in 1935.

Brower was selected from a thousand applicants to study medical illustration at Johns Hopkins. Her mentor was Max Brogel, the German artist who came to Johns Hopkins early in the century to launch its medical art program.

Brogel expected his students' knowledge of anatomy to be as detailed and comprehensive as a surgeon's. He taught Brower that an artist's sketch was better than a photograph if it revealed what was happening beneath the bloody field of view during surgery.

Brower became a frequent observer and recorder of events in the operating room. "The doctor would say to me, 'Now make note of that, sketch it.' I'd have to catch it on paper as the surgeons brought it out," she recalls.

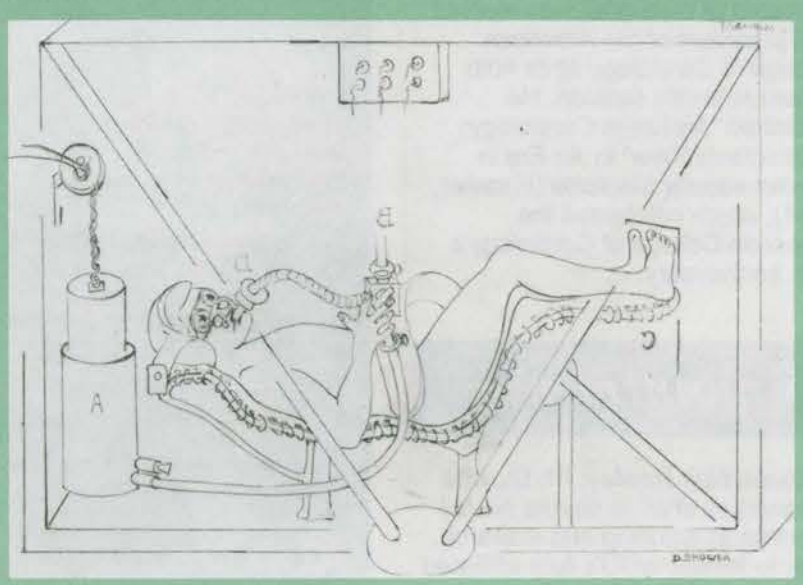
"It's difficult because you can't do it if you're too slow, and you can't draw from a copy or a photograph because the important features would be hidden," Brower adds. "You can't do flat work—you have to be able to feel the strokes in the striation of a muscle."

Brower studied medical photography at the University of Wisconsin and wax sculpture techniques at the Mayo Clinic. Her illustrations were published in medical texts and journals, and she created award-winning displays for museums and meetings of the American Medical Association.

Brower came to Dayton in the 1950s to work at the Armstrong Aeromedical Research Laboratory at Wright-Patterson AFB. She illustrated experimental procedures using animal and human subjects, which provided the medical information needed to ensure safety during early U.S. space exploration.

Brower's life rounded a circle at the Armstrong lab. The young girl who had met the first aviator to fly around the world eventually worked with John Glenn, the first American to orbit the earth in a spacecraft, and Neil Armstrong, the first human to set foot on the moon.

Dorothy Brower (above, left) crafts a face mask for a museum exhibit (center) of the different stages of thyroidectomy. (Right) Now age 90, Brower displays two illustrations she donated to WSU's Fordham library.



At Wright-Patterson Air Force Base, Brower's sketches documented experimental procedures designed to test the safety of human space flight.

Vitae

Appointments

John O. Lindower, M.D., Ph.D., was appointed executive associate dean for faculty and clinical affairs. He came to WSU in 1975 to chair the School of Medicine's curriculum development committee and has held a number of administrative positions since then, including associate dean for curricular affairs, associate dean for academic affairs, and interim dean. In his expanded role he will continue to work with faculty and hospital administrators, and he will represent the school's executive leadership at the community, state, and national levels.

William J. Marshall, M.D., was appointed associate dean for clinical affairs. In this position he will provide leadership in developing and maintaining the School of Medicine's affiliations with hospitals and the organized medicine community. A member of WSU's clinical faculty since 1975, he also was appointed professor of medicine. Dr. Marshall has held elected leadership positions in organized medicine at the local, state, and national levels, including the presidency of the Ohio State Medical Association and the Montgomery County Medical Society.

Paul G. Carlson, Ph.D., was appointed associate dean of student affairs and admissions. Since joining the administration in 1979, he served first as associate director, and most recently as assistant dean of student affairs and admissions.

John Bale, C.P.A., was appointed associate dean for fiscal affairs. A certified public accountant, he joined the administration in1986 as financial and budget manager and was promoted to assistant dean for administration in 1988.

Robert D. Reece, Ph.D., was appointed chair of the Department of Community Health. He had served as the department's acting chair since its creation in 1989. He was the founding chair of the Department of Medicine in Society, which is now part of the Department of Community Health.

Hjalmar F. Pompe Van Meerdervoort, M.D., was appointed chair of the Department of Orthopaedic Surgery. He replaces Hobart E. Klaaren, M.D., who retired as the department's founding chair.

Dr. Pompe Van Meerdervoort is director of WSU's Integrated Orthopaedic Surgery Residency Program.

Anthony J. Cacioppo, Ph.D., was appointed chair of the Department of Biomedical and Human Factors Engineering for the 1991–92 academic year. He

Scholarship

The Department of Family Practice established a scholarship to honor **Richard A. Falls, M.D.,** who retired from the fully affiliated faculty last year. The scholarship will be presented annually to a Wright State medical student from Greene County, where Dr. Falls lives and practices medicine, who has a strong interest in family practice or primary care. Dr. Falls remains active as a clinical professor of family practice. He is shown here with medical students Thomas Englehart and Kathryn Kazor at the 1991 Greene County Health Festival.

Election

Sylvan Weinberg, M.D., clinical professor of medicine, was elected vice-president of the American College of Cardiology at its 40th annual scientific session. He published "An Era in Cardiology: A Clinician's View" in *An Era in Cardiovascular Medicine* (Elsevier, 1991), which celebrates the American College of Cardiology's 40th anniversary.

Appointments

replaces Blair Rowley, Ph.D., who resigned as chair to devote his full attention to teaching and research. Prior to joining WSU's fully affiliated faculty in 1986, he was chief scientist in the Air Force Foreign Technology Division at Wright-Patterson Air Force Base.

School of Medicine Administration
Kim Goldenberg, M.D., Dean
John O. Lindower, M.D., Ph.D.
Albert E. Langley, Ph.D.
Cheryl Maurana, Ph.D.
Paul Carlson, Ph.D.
William Marshall, M.D.
John L. Bale, C.P.A.
Col. John Anderson, M.D.
Steven Cohen, M.D.,

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School of Medicine

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